

NEW SPECIES AND VARIETIES OF *PTILOTUS* R.Br.  
(AMARANTHACEÆ)

by

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1. *P. APPENDICULATUS* G. Benl, *species nova*. [Fig. 1.]

Planta lanuginosa—pilis dendroideis—caule uno erecto, semper villosa ad 50 cm alto, basi lignosa 4 mm crasso, per totam longitudinem foliato, ramoso; ramis ad 15 cm longis, basalibus (ad 7) 6–15 mm distantibus adscendentibus, mono- vel pleiostachyis. Folia alterna interdum secunda, inferne 1 cm, apicem versus 5 mm distantia, basalia longe (1,2 cm), caulina breviter petiolata; laminis ellipticis vel ovato-lanceolatis ad 6 cm longis, 1,8 cm latis, primo crassiusculis, albido-, dein cinereo-tomentosis, demum subglabrescentibus, margine undulatis, apice (1,5 mm) spinuloso-acuminatis; axillis lanatis.

Inflorescentiæ subcapitatae, spicis hemisphaericis 2,5 cm diam., raro terminalibus, saepius ad 12 pedunculatis (pedunculis 2–5 cm longis  $\pm$  foliatis) racemosis; rhachi brevi villosa.

Flores (15–30) straminei appendiculis lucidis tepalorum insignes. Bracteae et bracteolae hyalinae nitentes, costatae, acuminatae, inaequales: bractea fusciscente, oblonga vel subcordato-orbiculari ad 6 mm longa et 5 mm lata, dorso pilosiuscula; 2 bracteolis ellipticis vel obovatis ad 8 mm longis et 5 mm latis,  $\pm$  incoloratis, in nervo medio vix pilosis.

Tepala 5 linearia, apice nuda appendicem rhombeo-spathulatam formantia, basi trinervia valde indurata ad tubum cylindraceum extus hirsutum, ca. 2,5 mm longum coalita, extus pilis brevibus (inferne 3 mm, superne 1 mm longis), denticulato-nodosis, haud numerosis induta, inaequalia: 2 exteriora 1,3 cm longa, 1 mm lata, appendice ad 2,5 mm longa et 2 mm lata, intus glabra; 3 interiora  $\pm$  carinata 1,1 cm longa, 0,7 mm lata, appendice 1,5 mm longa et 1 mm lata, intus basim versus pilis lanatis obsessa.

Stamina 5 inaequalia, saepe 3–4 abortiva, basi dilatata in tubum membranaceum, 2,5 mm longum, dimidio inferiore tubo perianthii arcte adnatum, anulo integro (1,2 mm alto) coronatum coalita; filamentis fertilibus subulatis 5 mm longis, basi 0,5–0,7 mm latis, anantheris ligulatis,  $\pm$  acuminatis 2–3 mm longis, ad 1 mm latis; antheris ellipticis ca. 0,8 mm longis.

Ovarium subclavatum longe stipitatum, 4 mm longum (stipite 2 mm incluso), 1,2 mm latum, apice parce pilosum—pilis ad nodos denticulatis, 0,4 mm longis; stylo excentrico, 4 mm longo, apice  $\pm$  curvato, stigmatum minimo.

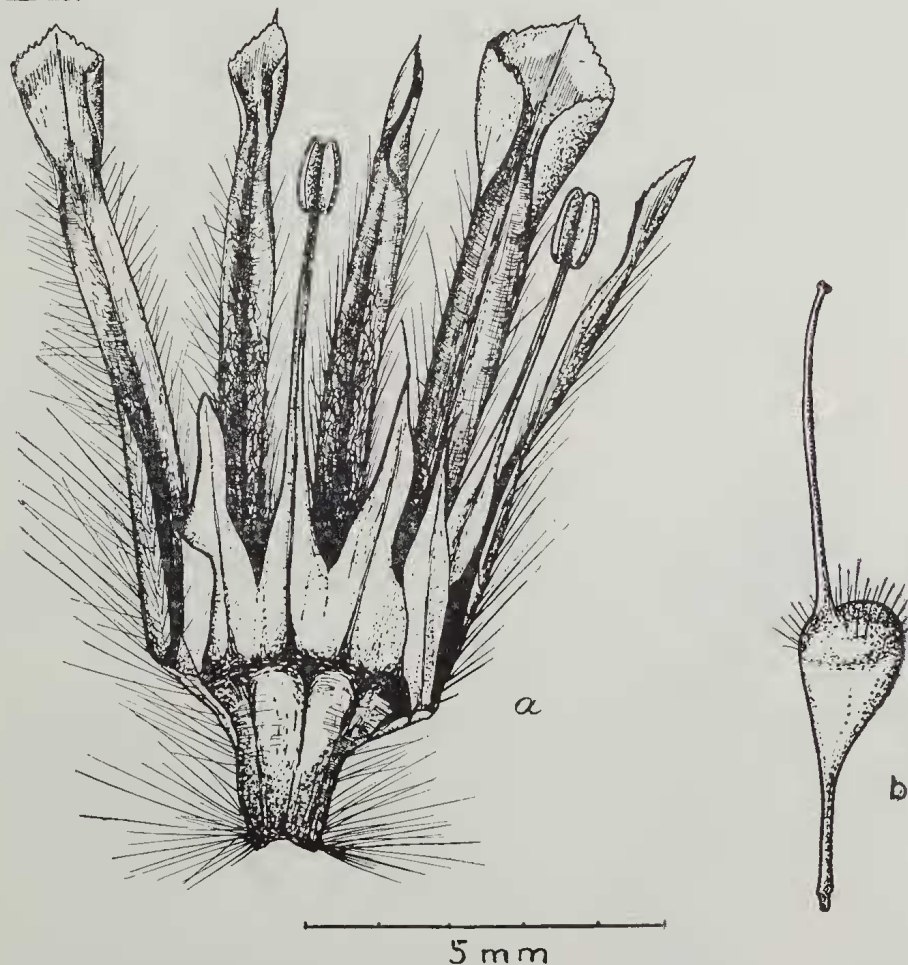


Fig. 1.—*Ptilotus appendiculatus* G. Benl. (a) Perianth with staminal cup spread open, inner view; (b) pistil.

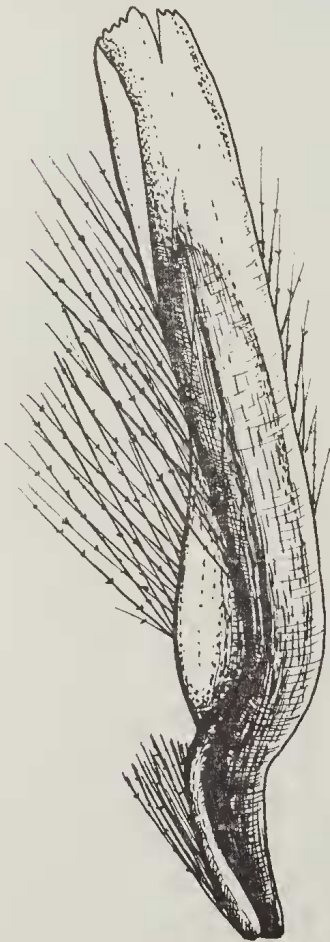
*Representative localities:* WESTERN AUSTRALIA—Globe Hill Station, Ashburton River (HOLOTYPE in K, ISOTYPE in E—*A. Morrison*, 6 Oct., 1905, No. 15098); Yule River and Fortescue River (in MEL—*A. Forrest*, 1878).

The plant approaches *P. fasciculatus* W. V. Fitzg. as to the size and form of the spikes, but differs markedly in the habit of the foliage. The general appearance of the new species somewhat resembles that of *P. axillaris* (F. Muell. ex Benth.) F. Muell., where, however, the leaves are glabrous, and many details of the flowers diverge. At first sight *P. appendiculatus* is recognizable by its conspicuous appendage-like extremities of the perianth-segments, together with the pubescence of the stem, the branches and leaves.

2. *P. CARINATUS* G. Benl, in *Mitteilungen der Botanischen Staatssammlung München*, Heft 14–15, 1956. [Fig 2.]

*Descriptio prima ad verbum iterata:*

Planta erecta, caule (>3 mm diam.) foliato, angulato-striato, sublævi, inflorescentiam versus tomentosiusculo, corymboso-ramoso; ramulis summis mono- vel pleiostachyis. Folia caulina, alterna breviter petiolata, laminis (ca. 3,5 cm longis, 1,2 cm latis) primo sparse pilosis, dein glabrescentibus, oblongo-lanceolatis, acuminatis, integerrimis, in petiolum (0,5 cm) alatum angustatis; superiora reducta (0,5–0,7 cm longa) squamiformia. Spicæ solitariae vel compositæ, pedunculatæ vel raro sessiles, terminales vel laterales, in paniculam congestæ, ovato-hemisphæricæ vel oblongo-ovoideæ, 1–2,5 cm longæ, ad 1,5 cm latæ; rhachi lanuginosa.



2 mm

Fig. 2.—*Ptilotus carinatus* G. Benl.  
Outer perianth-segment, side view.

Flores subdensi visu rosei, albido-pilosi (pilis denticulato-nodosis); bracteis bracteolisque scariosis, concavis inæqualibus: bractea atro-fusca conspicua, ovata, acuminata, ad 5 mm longa et 3 mm lata, extus laxe villosula, post lapsum perianthii superstiti; 2 bracteolis appressis præter nervum medium fuscum pilosiusculum ± hyalinis, nitentibus, subglabris, rotundis, 3,5 cm latis, apicem versus subserrulatis, in cuspidem setaceam 1 mm longam productis.

Perianthium 5-partitum campanulato-patens, basim constrictam versus valde indurescens; tepalis linearibus obtusis, basi ima incrassata et indurata in tubum 1 mm longum (1,2 mm diam.), extus hirsutum angustatis et coalitis, inferne conspicue carinatis, rigidis, dorso inæqualiter pilosis (pilis ad 2 mm longis apicem haud æquantibus), bicoloratis, limbatis, areola mediana virescenti pubescentia abscondita, marginibus inferne ciliatis, superne roseis in apicem nudum, roseum, 1,8 longum, dilatatum, interdum recurvatum transeuntibus, inæqualibus: 2 exterioribus 7,5 mm longis, 1 mm latis, apice truncato, subdenticulato 1,5 mm lato, intus glabris; 3 interioribus 7 mm longis, 0,7 mm latis, apice subspathulato, eroso-denticulato 1,2 mm lato, intus in parte inferiore pilis crispis, intricatis, marginibus præcique orientibus indutis.

Stamina 5 inæqualia, plerumque 2–3 minora abortiva, basi dilatata (0,5 mm) in anulum minimum (0,1–0,2 mm altum) membranaceum, glabrum, tubo perianthii partim adnatum coalita; pseudostaminodiis nullis; filamentis fertilibus ligulatis, linearibus ad 4 mm longis, 0,15 mm latis, superne subulatis, antheris bilocularibus obscure flavis, subrotundis (0,6–0,7 mm diam.), dorso affixis. Ovarium subclavatum longe stipitatum, 1,5 mm latum, stipite incluso 2,8 mm longum (stipite 1 mm), apice villosa; stylo  $\pm$  excentrico, gracili ad 3 mm longo, glabro; stigmatibus distincte capitellato, papilloso.

*Representative locality*: WESTERN AUSTRALIA—near Wittenoom Gorge, about 100 miles south of Marble Bar (HOLOTYPE in NSW—K. McMahon, 1952; No. 33667).

*P. carinatus* is easily distinguished from all those species possessing a visible, naked, blunt and denticulate apex of their perianth-segments by its striking ciliate keel in the lower part of the tepals, a feature not observed until now in any previously described species.

### 3. *P. PSEUDOHELIPTEROIDES* G. Benl, *species nova*. [Fig. 3.]

Herba annua (?) pubescens pluricaulis, caulibus (ca. 10) ad 20 cm altis, basi 3,5 mm diam., erectis vel adscendentibus, foliosis, striatulis, primo tomentosiusculis—pilis crispis nodulosis—dein subglabris, ramosis; ramis (4–10)  $\pm$  fastigiatis, mono- vel plurispicatis.

Folia alterna obscure viridia, pilis argenteis sericeis (3 mm longis) induta, 1–2 cm distantia, petiolata, summa inflorescentiam juvenilem  $\pm$  involventia; laminis oblongo-lanceolatis ad 3 cm longis, 0,8 cm latis, mucronatis (mucrone ca. 1 mm longo), basi in petiolos ad 0,7 cm longos contractis, integerrimis, nervo medio subtus prominente.

Spicæ numerosæ elongato-ovoideæ, 2,2 cm longæ, 1,4 cm latæ, pedunculatæ, subdense paniculatæ; rhachi villosa. Flores (ca. 50) conferti straminei; bracteis bracteolisque inæqualibus conspicuis, glabris, scariosis, tenuibus, hyalinis, pallide succineis, lucidis, integerrimis, haud appressis, uninerviis, nervo in cuspidem (0,5 mm) producto: bractea inferiore  $\pm$  angustata, ovato-lanceolata, 6 mm longa, ad 2,5 mm lata, post lapsum perianthii superstiti, 2 bracteolis lateralibus ovoideis, 5 mm longis, 3 mm latis.

Perianthium pentaphyllum campanulato-patens, erectum, basim incrassatam, callosam, conicam, extus hirsutam versus indurescens; tepalis lineari-oblongis, distincte uninerviis, ecarinatis, rigidis, parte inferiore subcartilagineis, limbatis, parte mediana virescenti, apicem versus divaricatis, usque ad basim fere liberis, intus lævigatis extus hirsutis (pilis dorsalibus rectis, albidis ca. 2 mm longis, articulatis, apicem vix excedentibus), inæqualibus: 2 exterioribus ad 7 mm longis et 1,2 mm latis obtusis intus glabris (pilis paucis brevibus, nervo medio inferiore orientibus exceptis), marginibus hyalinis in apicem nudum, truncatum, serrulatum, 0,3 mm latum transeuntibus; 3 interioribus 6 mm longis, 1 mm latis acutis, intus opacis, basi pilis crispis, haud numerosis, imprimis marginibus orientibus indutis.

Stamina 5, omnia æqualia fertilia vel 1–2 sterilia, longiora (3 mm), basi modice dilatata in anulum brevem (ca. 0,2–0,4 mm), membranaceum, plerumque fimbriatum, basi callosæ perianthii adnatum coalita; pseudo-staminodiis  $\pm$  imperfectis, fissis; filamentis filiformibus, antheras fertiles portantibus 2 mm longis, 0,05 mm, basim versus 0,1–0,3 mm latis, primo dilute fulvis, dein parte mediore  $\pm$  rufescentibus; antheris bilocularibus, ellipticis, obscure flavis 0,2 mm longis et 0,1 mm latis, dorso affixis.

Ovarium subglobosum, sessile ca. 1 mm longum, apice lanuginosum; stylo centrali glabro, 1,5 mm longo, basi, 0,1 mm diam.; stigmatate papilloso inconspicuo.

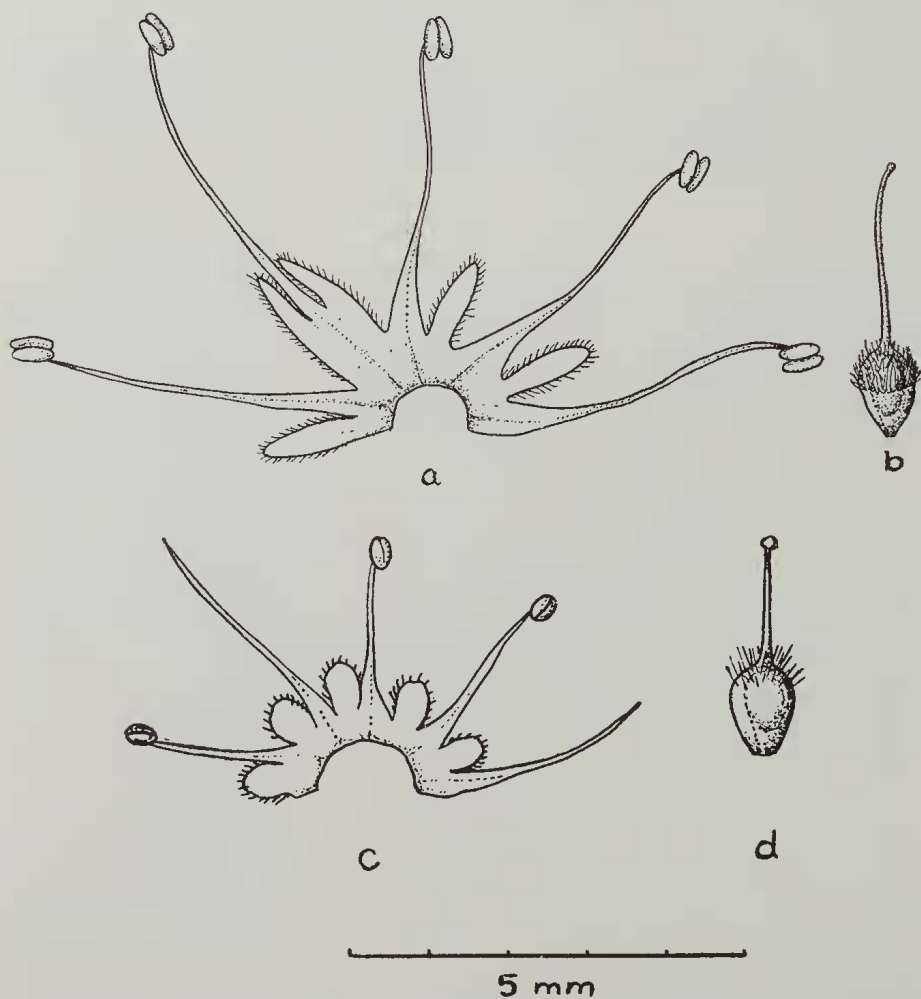


Fig. 3.—*Ptilotus helipteroides* (F. Muell.) F. Muell., var. *helipteroides*. (a) Staminal cup spread open, inner view; (b) pistil.—*Ptilotus pseudohelipteroides* G. Benl. (c) staminal cup spread open, inner view; (d) pistil.

*Habitat*: "On hard bare pebbly brown clay loam flats" (fide S. L. Everist).

*Representative locality*: QUEENSLAND (Gregory North District)—Currawilla, about 100 miles west of Windorah: Stallion Paddock (HOLOTYPE in CANB, ISOTYPES in BRI and K—S. L. Everist, 9th June, 1949, No. 3937).

The present species bears in its general appearance some likeness to *P. helipteroides* (F. Muell.) F. Muell., var. *helipteroides*. But apart from numerous details in the structure of the leaves and especially of the flowers (Fig. 3) the latter is characterized by the red colour of its perianth-segments. Traces of red may be observed even in plants collected more than 46 years ago, while the three specimens of *P. pseudohelipteroides* found in 1949 by Mr. S. L. Everist and cited above do not show the least bit of red in their straw-coloured spikes. *P. helipteroides* is known from Northern Territory, from Western and South Australia, the new and really distinctive species comes from Queensland: the disjunction of the respective localities may be considered as an additional argument for separating the plant from *P. helipteroides*.

4. *P. DISSITIFLORUS* (F. Muell.) F. Muell., var. *LONGIFOLIUS* G. Benl, *varietas nova*.

Perennis haud tomentosa (rhachi excepta), minus ramosa. Recedit a typo speciei foliis glabris ad 7 cm longis, 5 mm latis, spicis floribusque maioribus, tepalis apicibus denticulatis, filamentis cupulam versus conspicue (ad 0,45 mm) dilatatis.

TYPE from Port Denison, QUEENSLAND (North Kennedy) (HOLOTYPE of variety in MEL—E. Fitzalan, 1874).

The variety differs from the typical form primarily in the longer, narrower and glabrous leaves, thus resembling in its habit of foliage *P. distans* (R. Br.) Poir., from which it is, of course, well distinguished by its floral structure. This had already been stated in 1951 by Miss C. I. Skewes (MEL).

5. *P. LANATUS* A. Cunn. ex Moq., var. *GLABROBRACTEATUS* G. Benl, *varietas nova*, [Fig. 4.]

Rhachis minus villosa; bractea 3,5 mm longa lanam rhachis multo excedens, glabra (ima basi interdum excepta), bracteolæ 2 mm longæ apicem versus vix pilosulæ; pili tepalorum minus densi, crispiores.

*Representative localities*: WESTERN AUSTRALIA—near King Sound (HOLOTYPE of variety in MEL, ISOTYPES in NSW and K—W. W. Froggatt, 1887); Balmaningarra, Northern Kimberley District (in K and NSW—H. Basedow, April, 1916, No. 74).

The distinguishing feature of the above variety is the different size of the bract and bracteoles, and their lack of pubescence, as Fig. 4 shows.

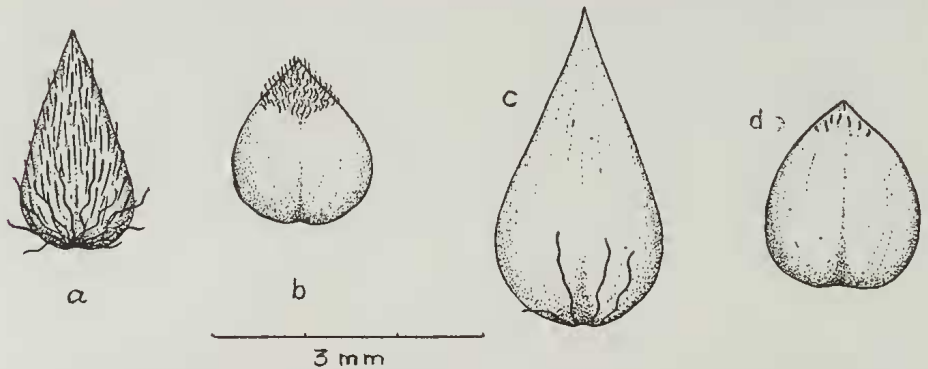


Fig. 4.—*Ptilotus lanatus* A. Cunn. ex Moq., var. *lanatus*. (a) bract; (b) bracteole.—*Ptilotus lanatus* A. Cunn. ex Moq., var. *glabrobracteatus* G. Benl. (c) bract; (d) bracteole.

6. *P. STIRLINGII* (Lindl.) F. Muell., var. *PUMILUS* G. Benl, *varietas nova*.

*Planta pumila*, caulibus (10) ex rhizomate (4 mm diam.) orientibus dense collocatis, albido-tomentosis, 7–12 cm longis, mono- ad tetrastachyis; foliis pilosis inferioribus ad 3,5 cm, superioribus vix 0,8 cm longis; spicis hemisphaericis 1,5 cm diam., rhachi lanuginosa, bractea 3,5 mm longa et 1,5 mm lata, extus villosa, bracteolis 4 mm longis, 2 mm latis, tubo perianthii 1,2 mm longo; tepalis extus pilis spinuloso-articulatis 4 mm longis obtectis, exterioribus 8,5 mm, interioribus 7,5 mm longis; staminibus fertilibus (2) 4–5 mm longis; ovario glabro 2 mm, stylo 3 mm longo.

TYPE from Sharks Bay, WESTERN AUSTRALIA (HOLOTYPE of variety in MEL—*F. Mueller*, Oct., 1877).

This plant looks like a dwarf of the usual form of the species, with a denser indumentum of the perianth-segments. Further differences—regarding proportions of floral organs—are brought out by closer examination.

The new species and varieties presented above were found out of a total of more than 3,000 specimens of *PTILOTUS/TRICHINIUM* from European, American and Australian herbaria. The study of the Australian material was made possible to me by the courtesy of Mr. R. H. Anderson (Botanic Gardens, Sydney), Miss N. T. Burbidge (C.S.I.R.O., Division of Plant Industry, Canberra), Miss C. M. Eardley (University of Adelaide, Department of Botany), Mr. S. L. Everist (Botanic Museum and Herbarium, Brisbane), Mr. A. W. Jessep (Melbourne Botanic Gardens and National Herbarium of Victoria, South Yarra), Dr. R. T. Patton and Miss E. M. Packe (University of Melbourne, Botany Department), and of Miss C. I. Skewes (National Herbarium of Victoria, South Yarra). A considerable number of sheets were generously sent to our Munich State Collection as a gift by the National Herbarium of New South Wales (Mr. R. H. Anderson), the Herbarium of the Division of Plant Industry, Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.), Canberra (Miss N. T. Burbidge), the Queensland Herbarium, Brisbane (Mr. S. L. Everist), and by Mrs. H. E. Ramsay, Red Cliffs, Victoria.

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